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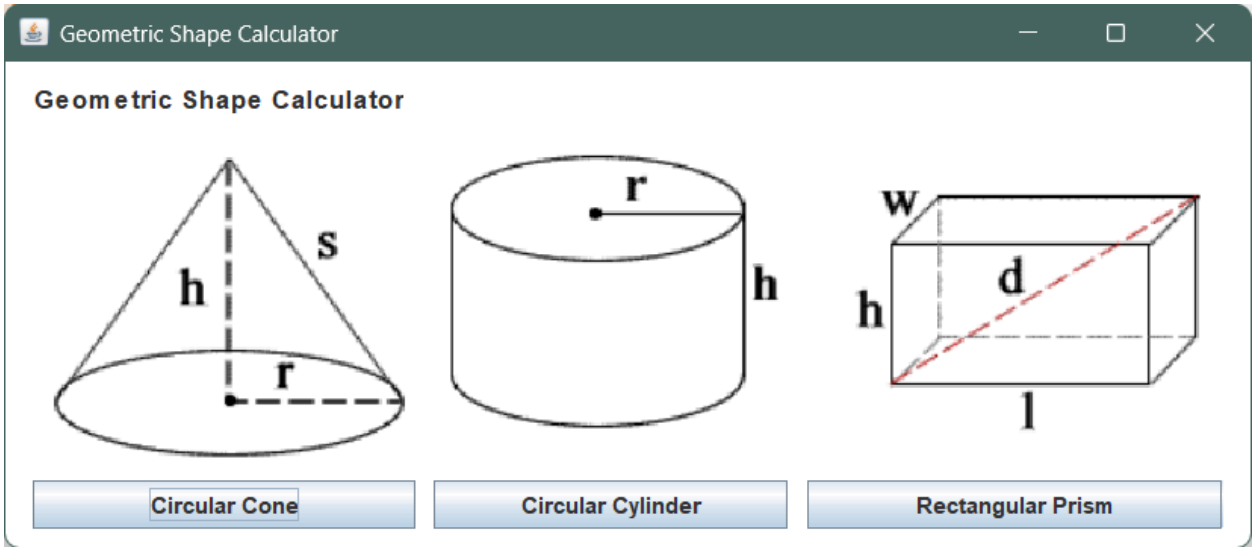
Lab #10

ฝึกการใช้ GUI และ JAR

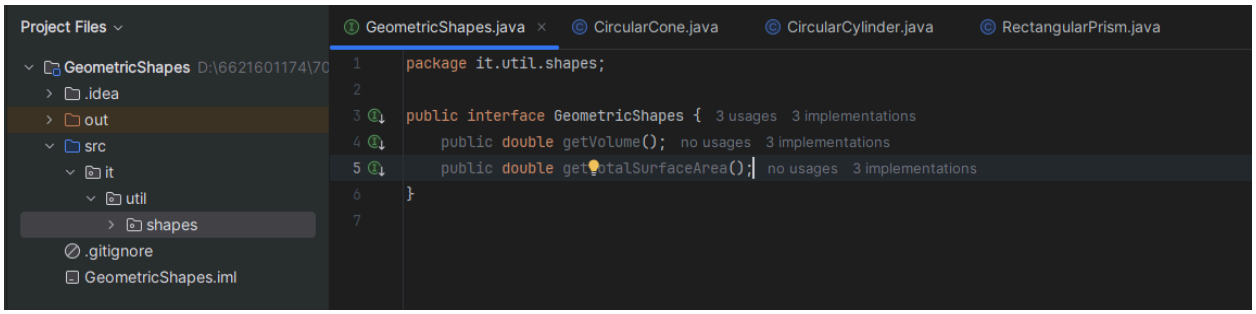
Question #1

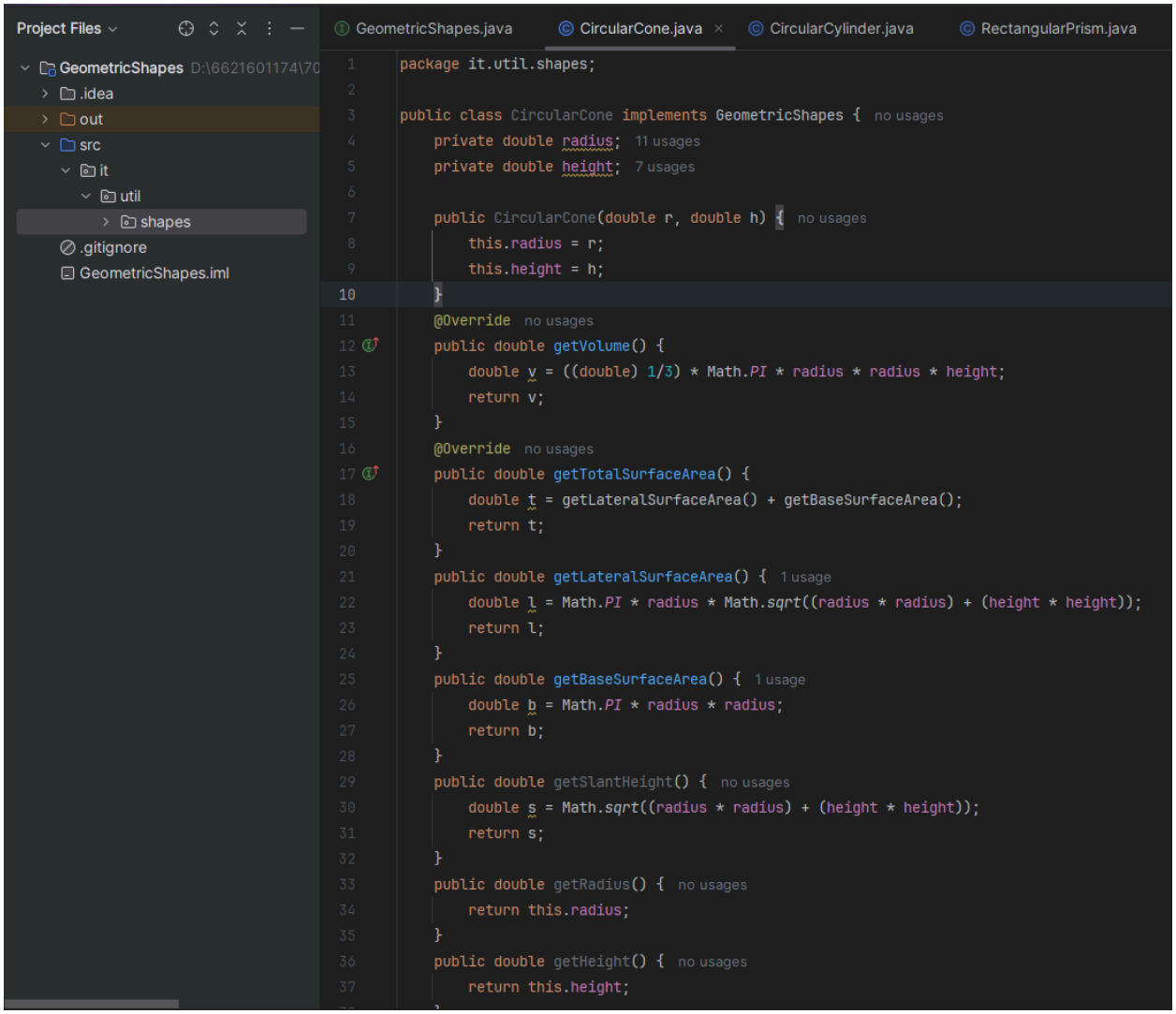
1. จาก Java Project ชื่อว่า *GeometricShapeCalculator* ในเนื้อหาช่วงบรรยาย ให้นิสิตพัฒนาส่วนที่เหลือให้ครบสมบูรณ์
2. สร้าง GUI Form ในรูปทรงส่วนที่เหลือให้ครบถ้วน ได้แก่ Circular Cylinder และ Rectangular Prism โดยในส่วนของ Sub Form ทั้ง 2 นั้นให้ออกแบบได้ตามสะดวก

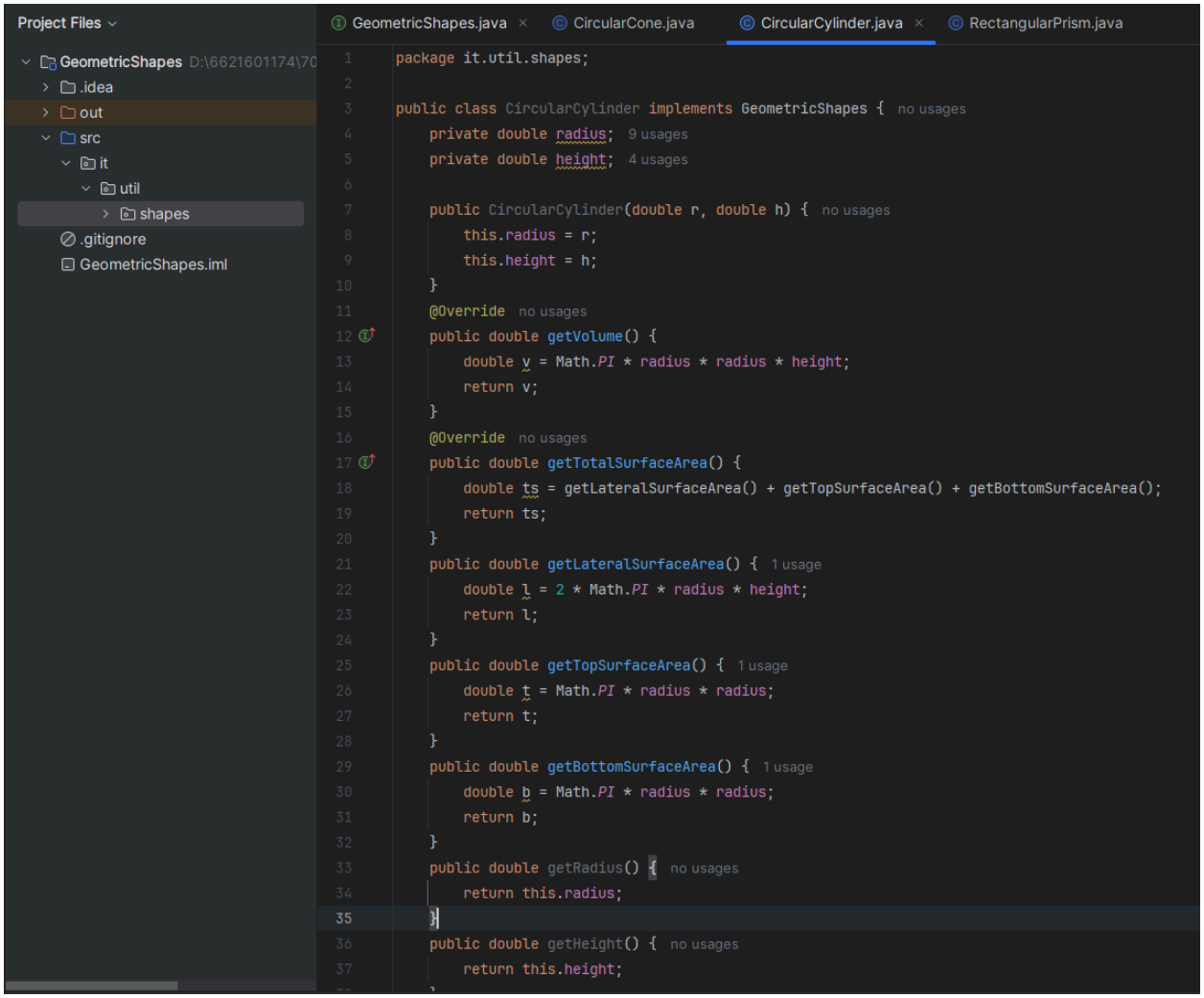


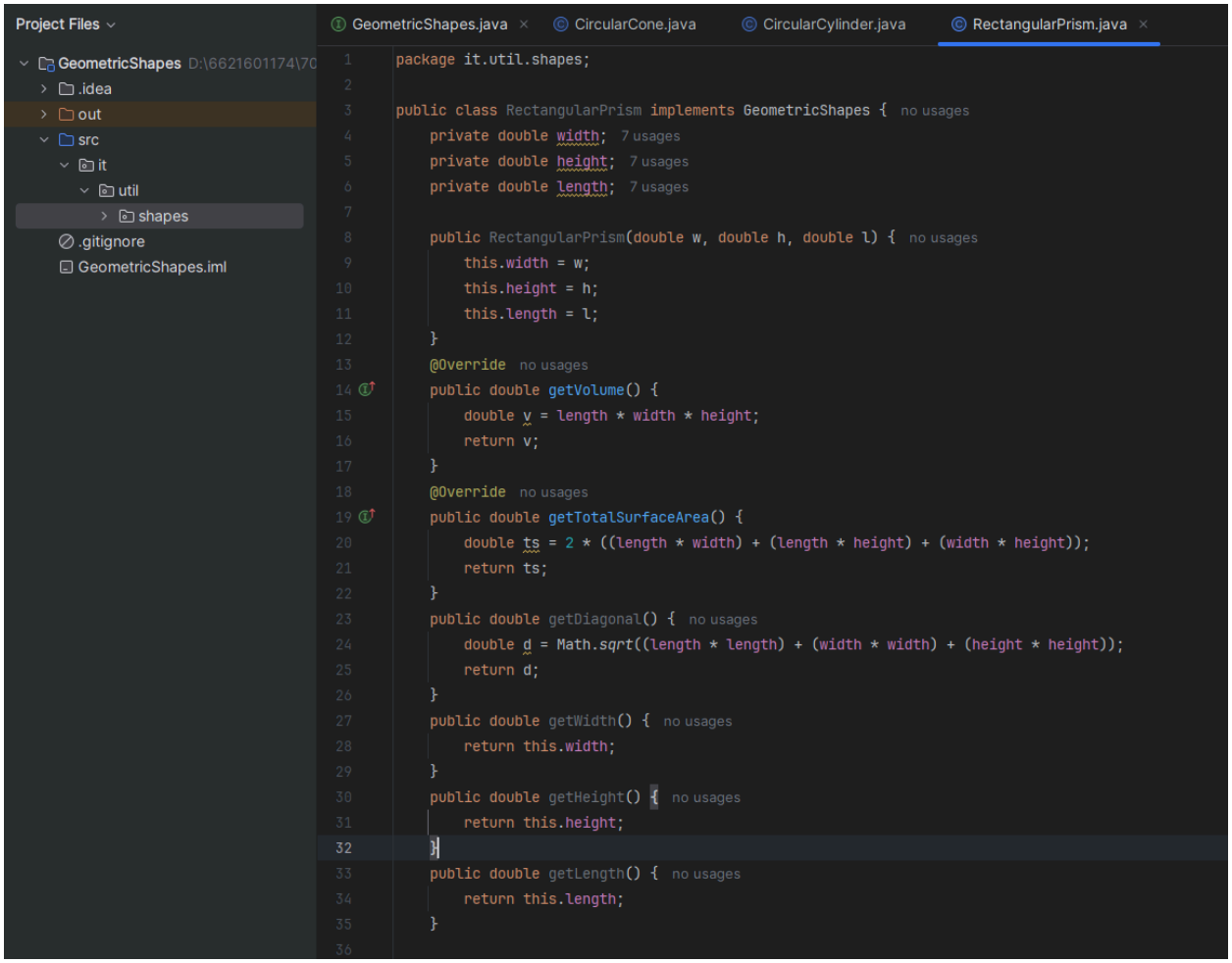
คำตอบ #1

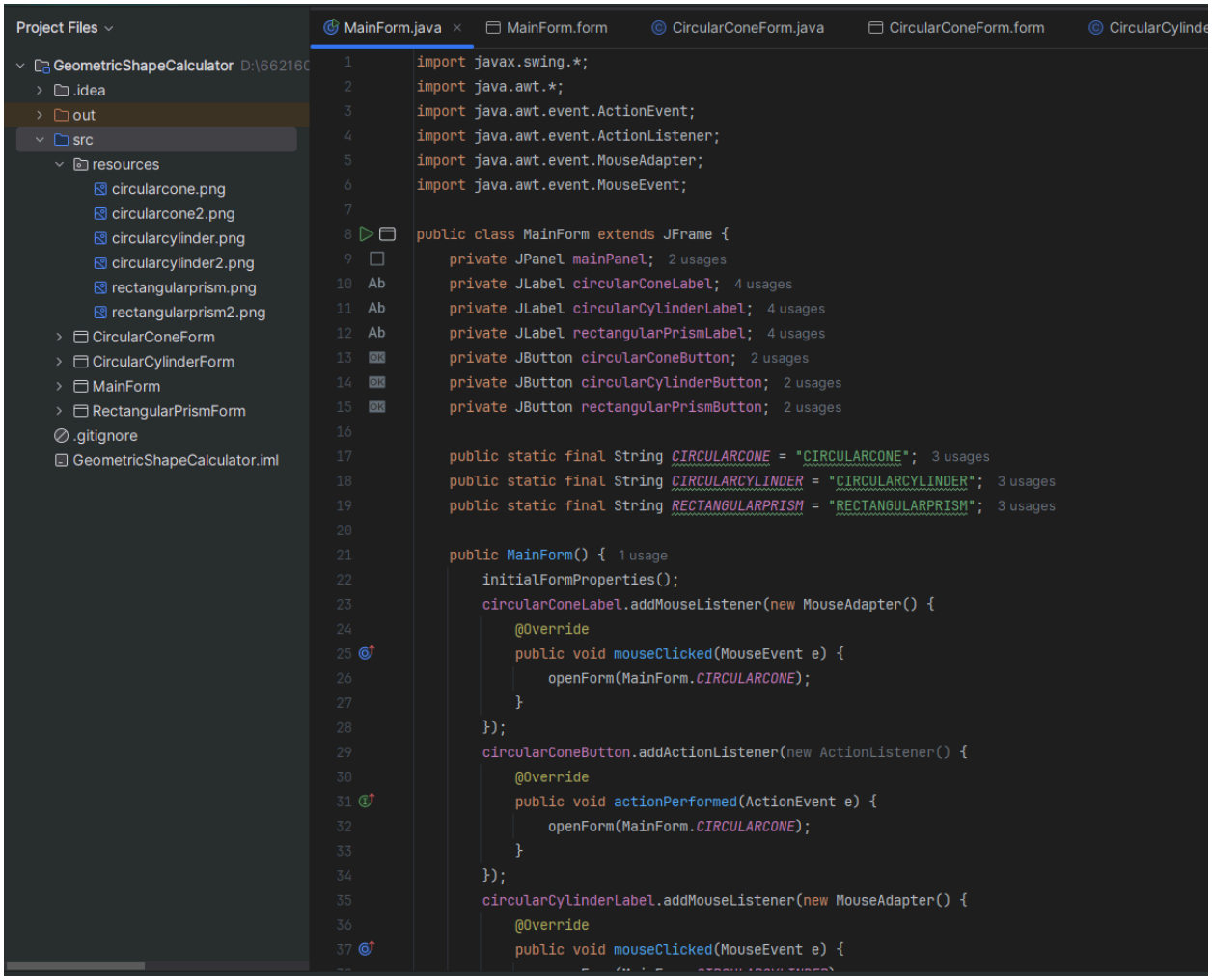
Source Code

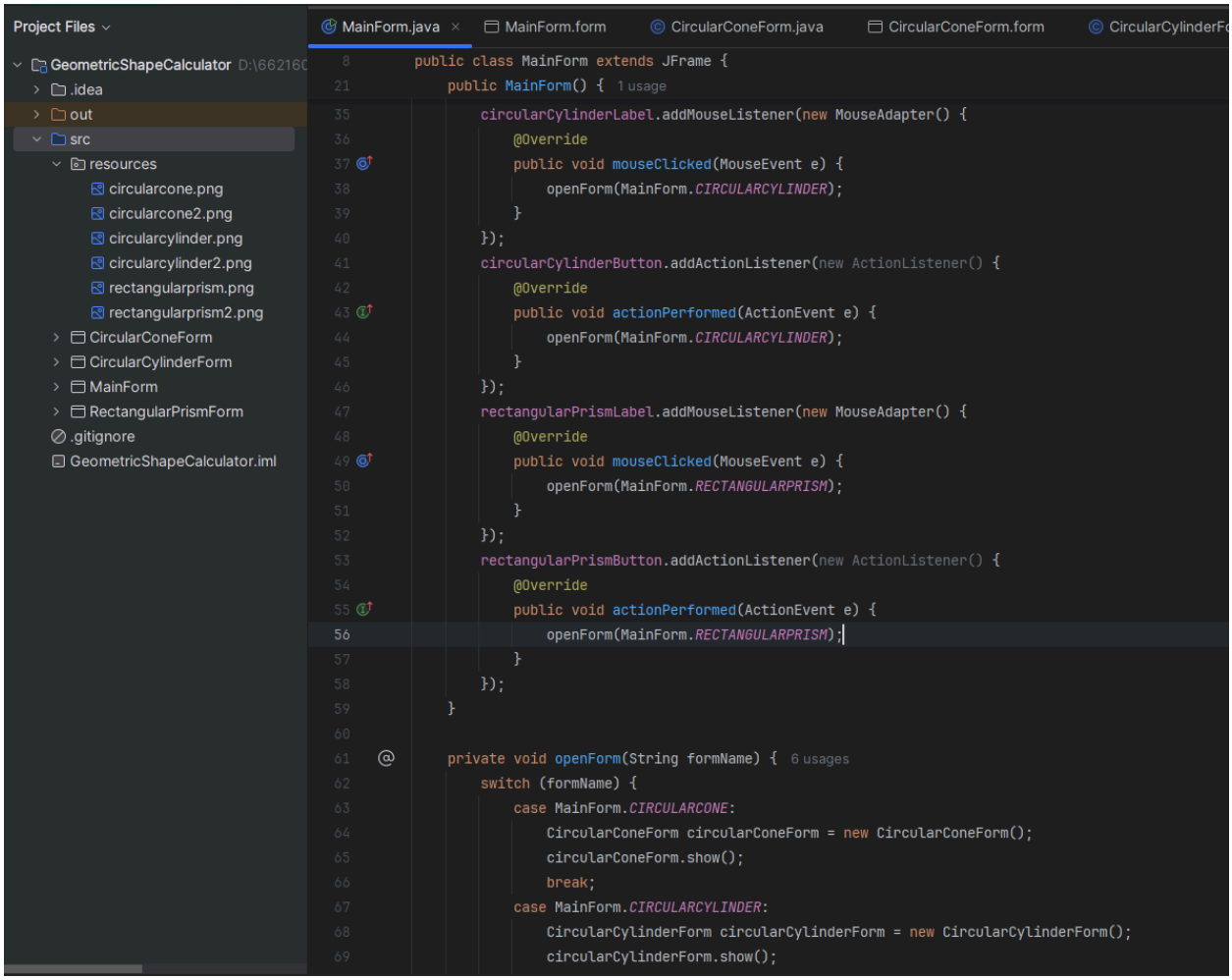


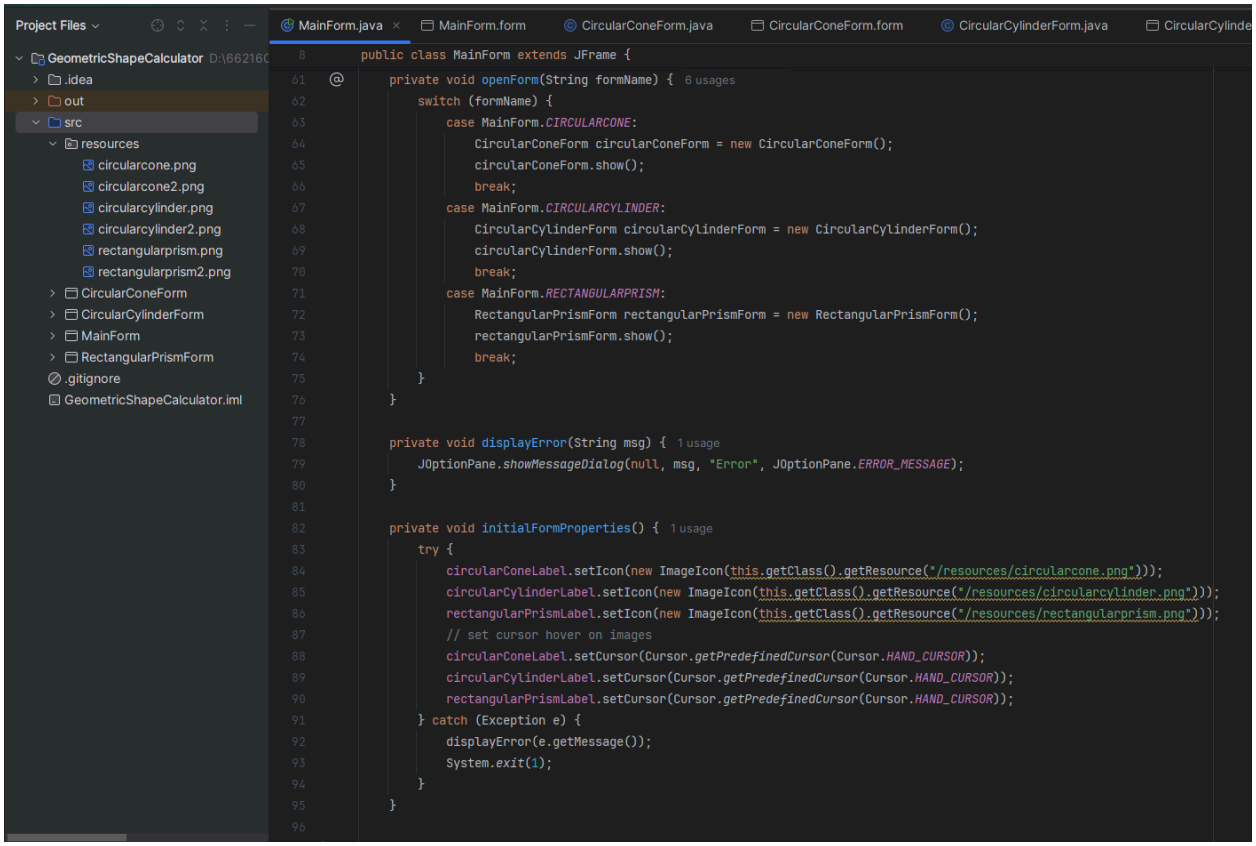


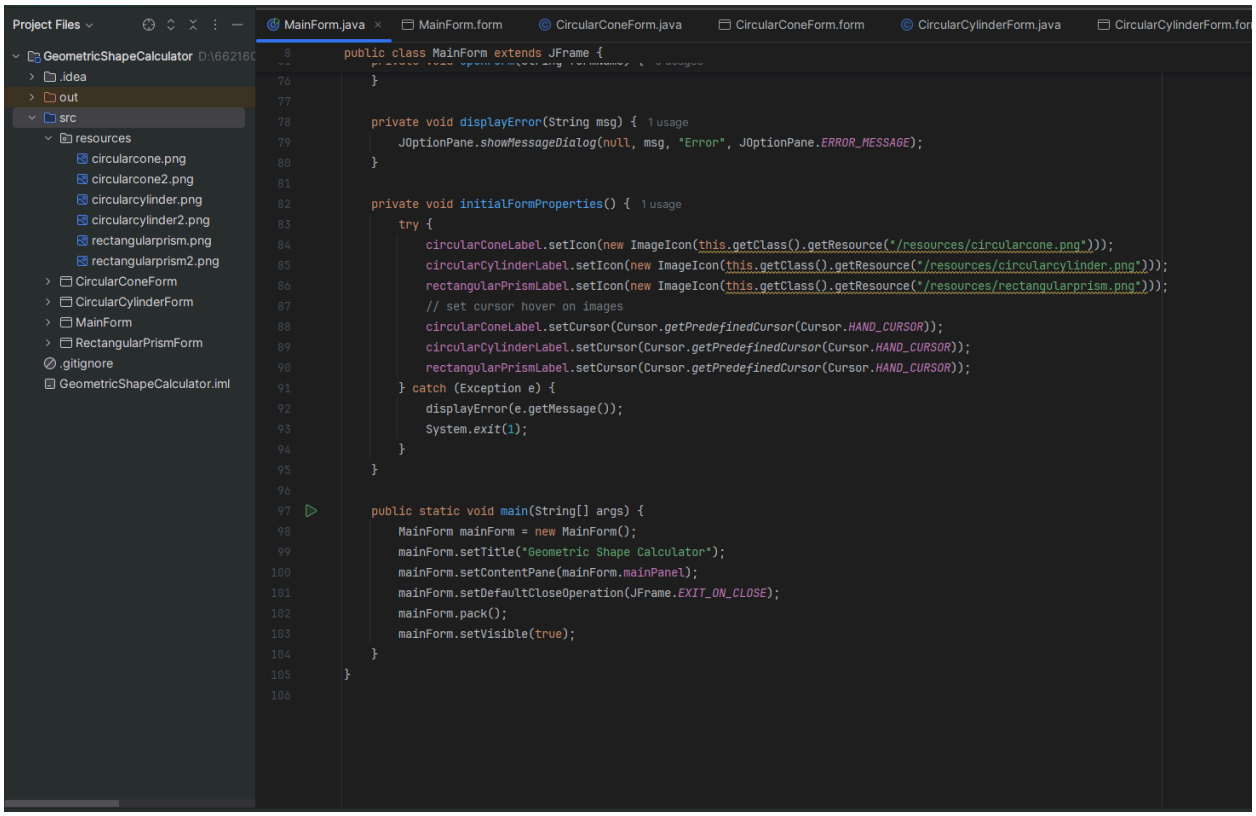


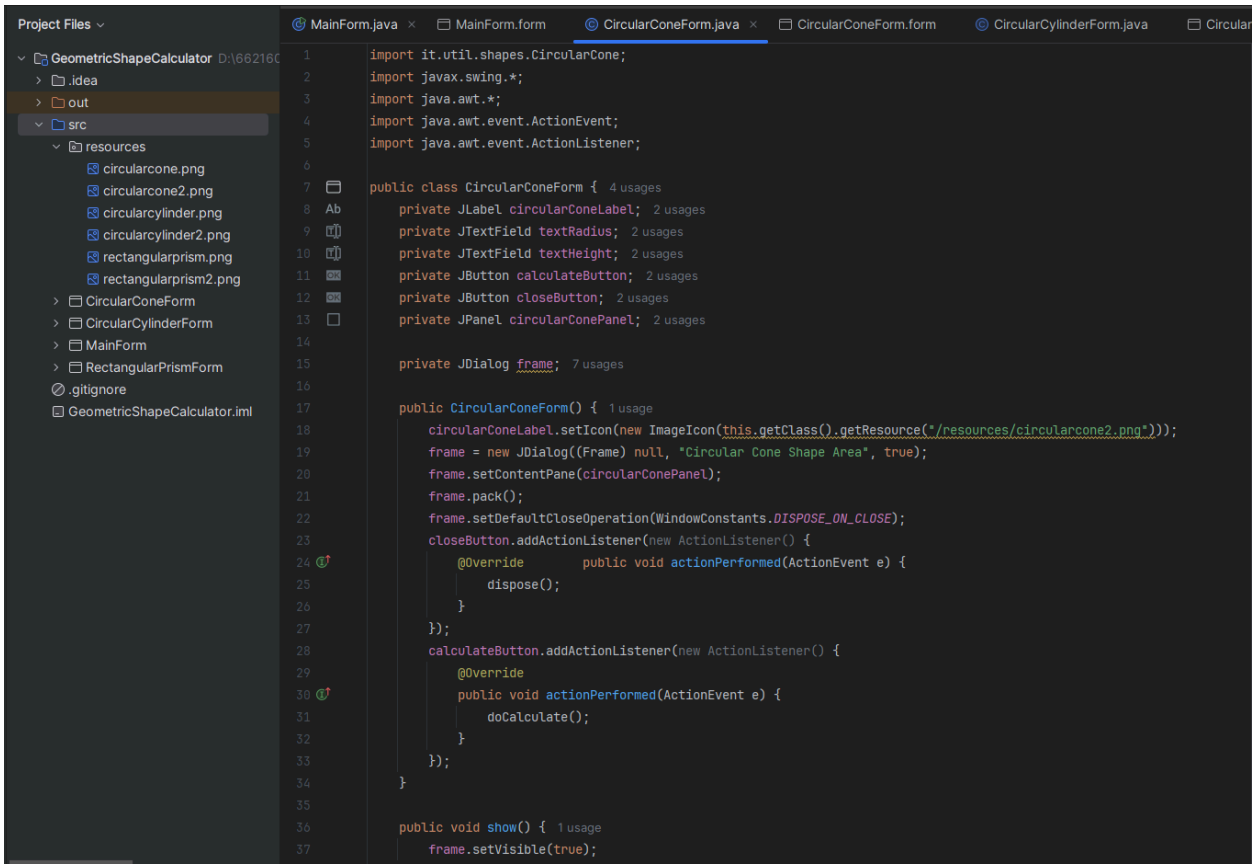


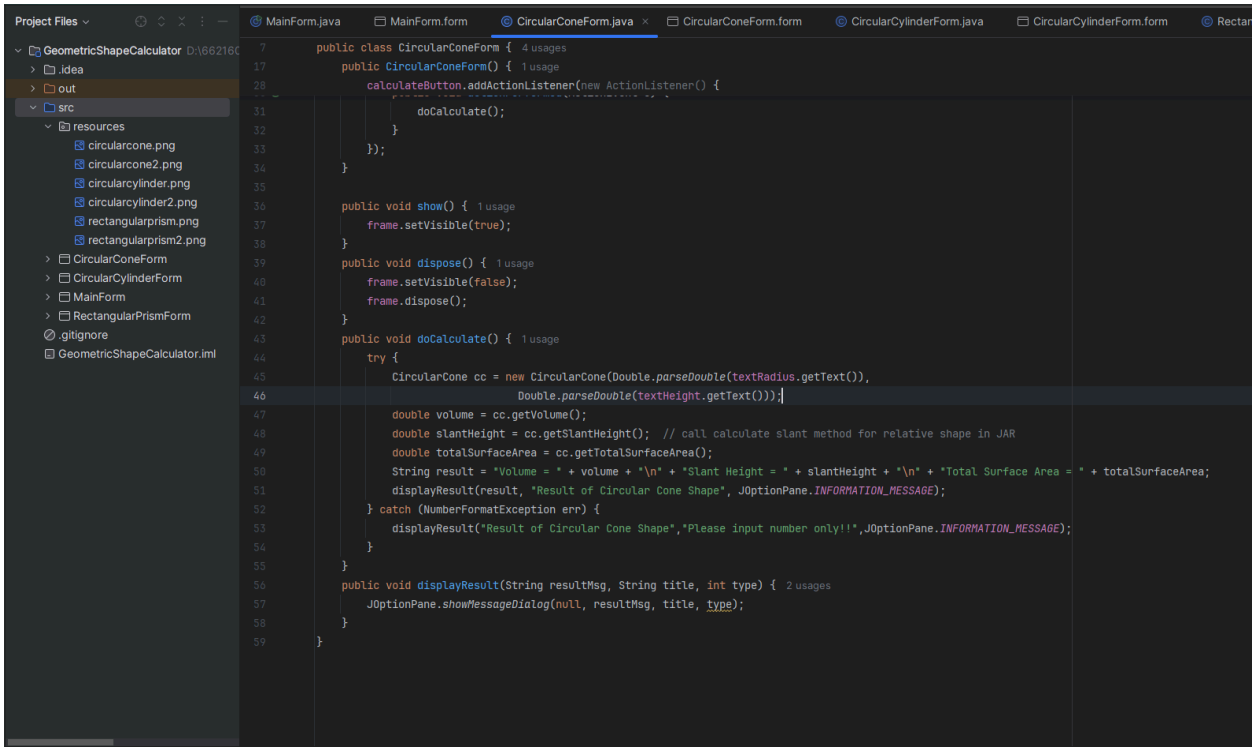


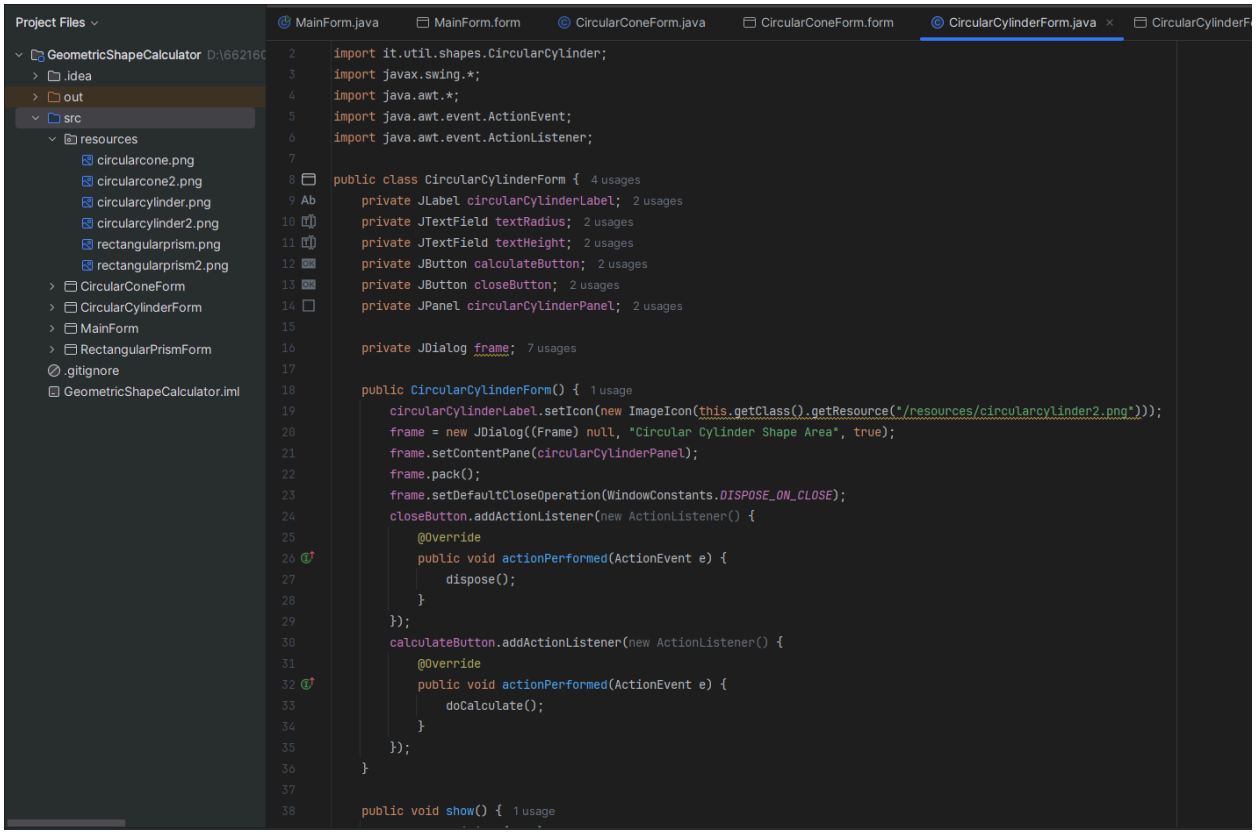


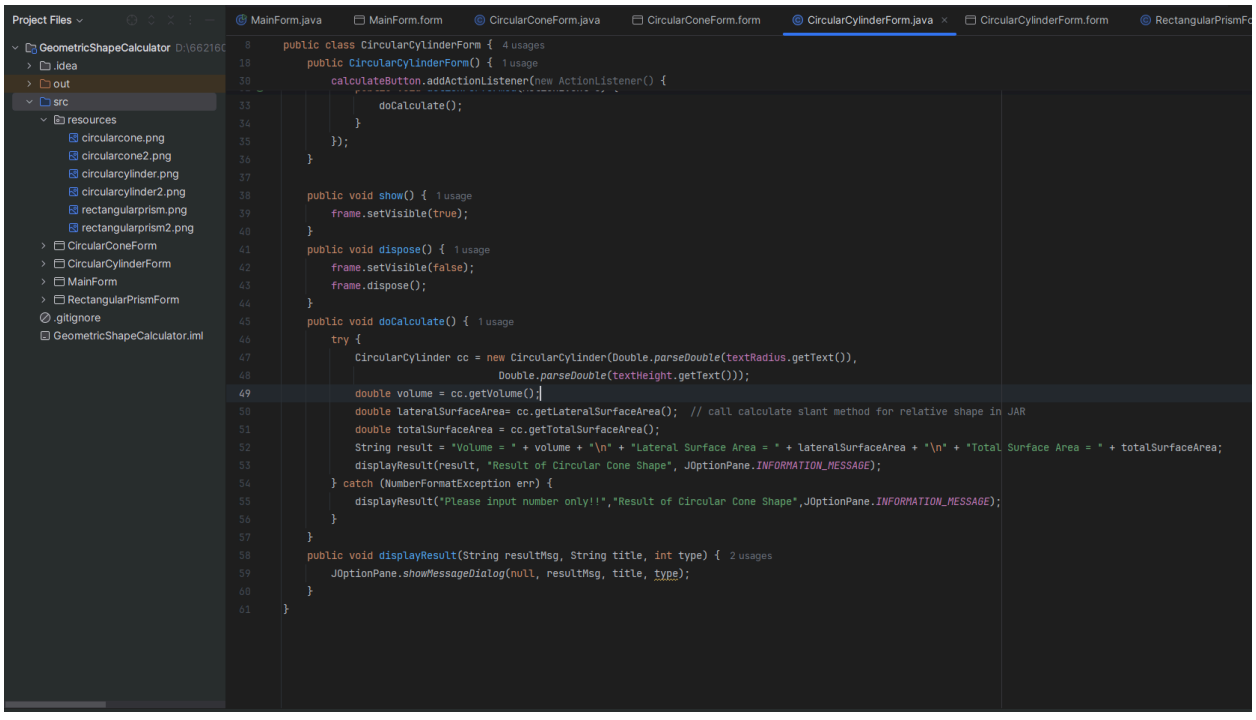


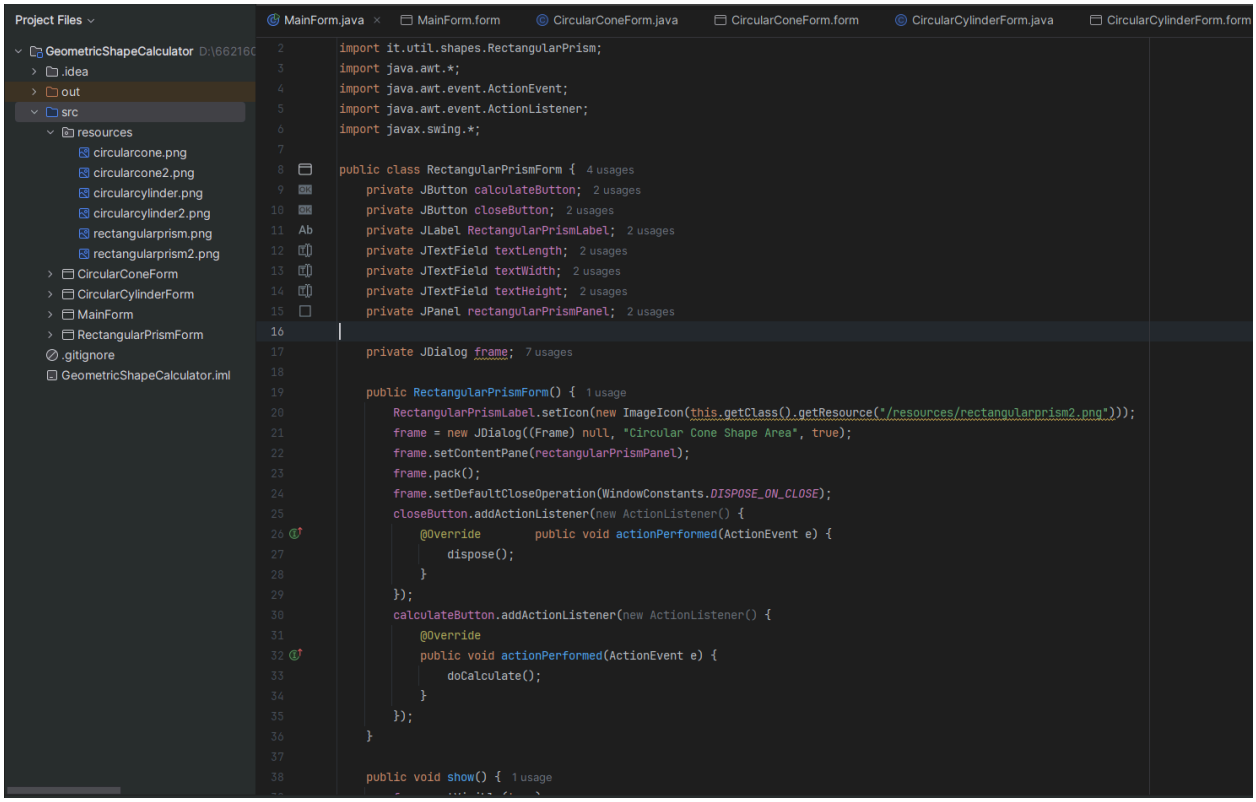












```
Project Files
GeometricShapeCalculator D:\66216C
  .idea
  out
  src
    resources
      circularcone.png
      circularcone2.png
      circularcylinder.png
      circularcylinder2.png
      rectangularprism.png
      rectangularprism2.png
    CircularConeForm
    CircularCylinderForm
    MainForm
    RectangularPrismForm
  .gitignore
  GeometricShapeCalculator.iml
```

MainForm.java | MainForm.form | CircularConeForm.java | CircularConeForm.form | CircularCylinderForm.java | CircularCylinderForm.form

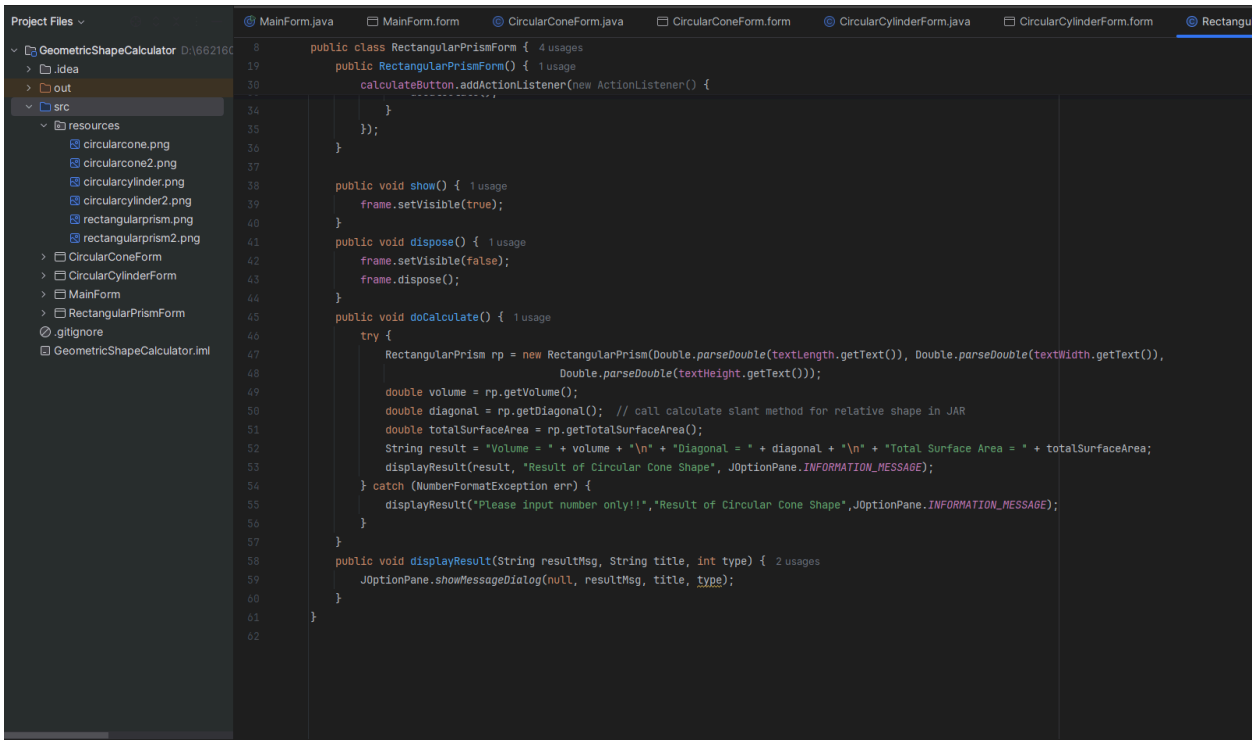
```
import it.util.shapes.RectangularPrism;
import java.awt.*;
import java.awt.event.ActionEvent;
import java.awt.event.ActionListener;
import javax.swing.*;

public class RectangularPrismForm {  4 usages
    private JButton calculateButton;  2 usages
    private JButton closeButton;  2 usages
    private JLabel RectangularPrismLabel;  2 usages
    private JTextField textLength;  2 usages
    private JTextField textWidth;  2 usages
    private JTextField textHeight;  2 usages
    private JPanel rectangularPrismPanel;  2 usages

    private JDialog frame;  7 usages

    public RectangularPrismForm() {  1 usage
        RectangularPrismLabel.setIcon(new ImageIcon(this.getClass().getResource("/resources/rectangularprism2.png")));
        frame = new JDialog((Frame) null, "Circular Cone Shape Area", true);
        frame.setContentPane(rectangularPrismPanel);
        frame.pack();
        frame.setDefaultCloseOperation(WindowConstants.DISPOSE_ON_CLOSE);
        closeButton.addActionListener(new ActionListener() {
            @Override        public void actionPerformed(ActionEvent e) {
                dispose();
            }
        });
        calculateButton.addActionListener(new ActionListener() {
            @Override
            public void actionPerformed(ActionEvent e) {
                doCalculate();
            }
        });
    }

    public void show() {  1 usage
```



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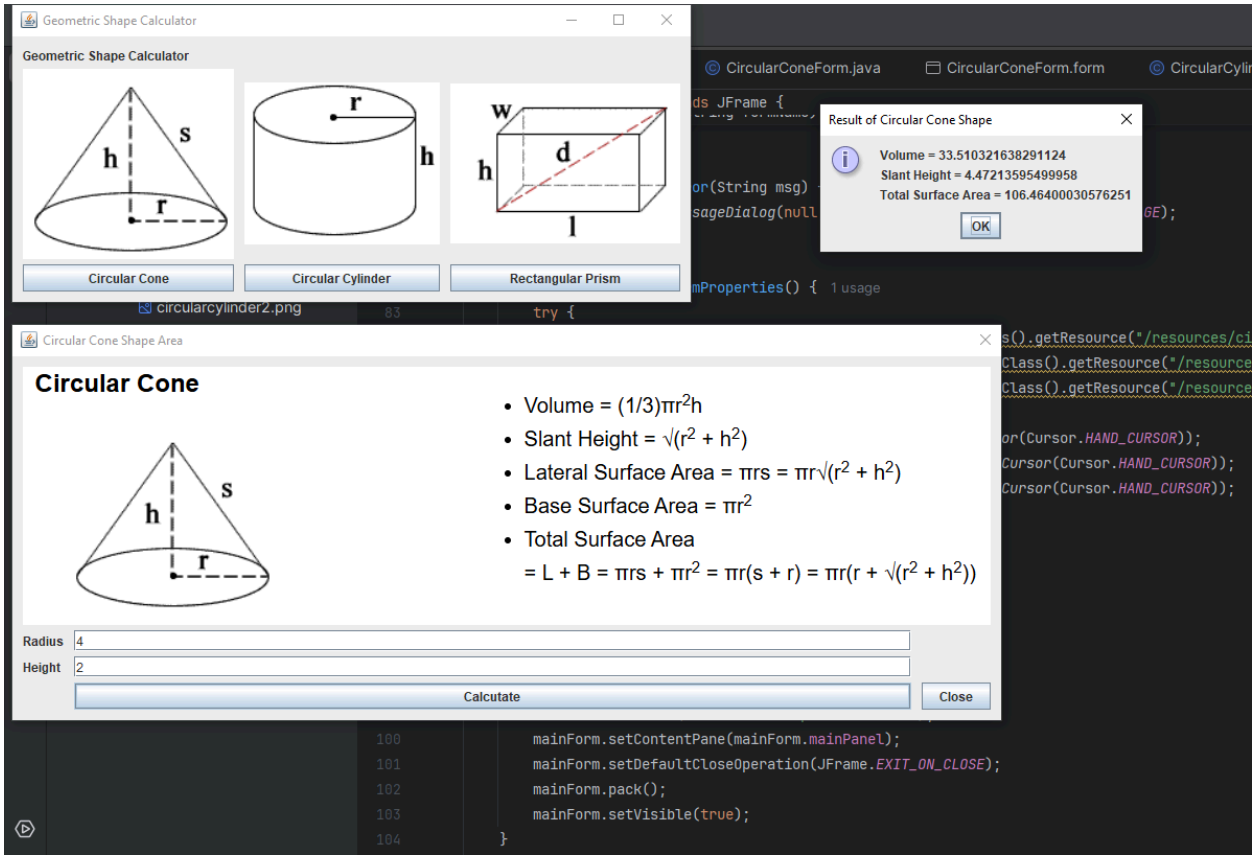
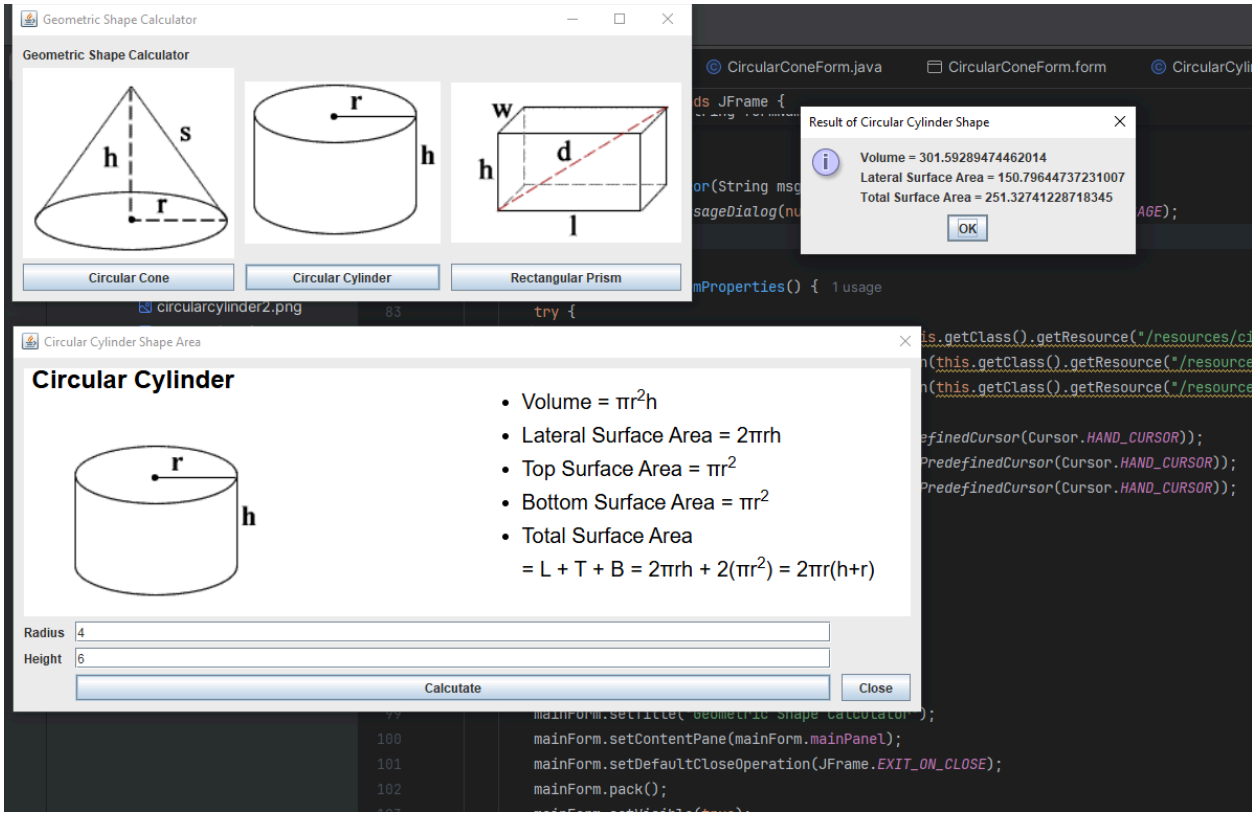
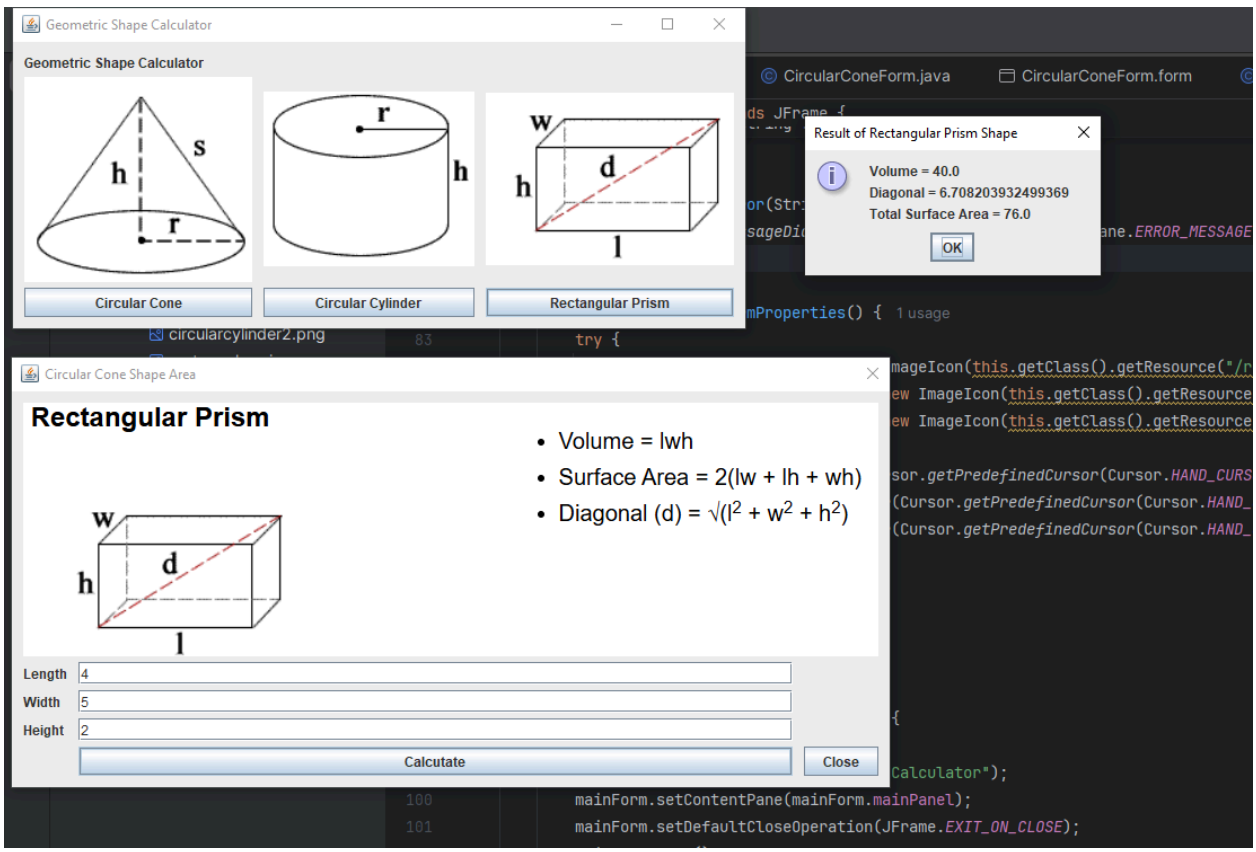
MainForm.java | MainForm.form | CircularConeForm.java | CircularConeForm.form | CircularCylinderForm.java | CircularCylinderForm.form | Rectangu

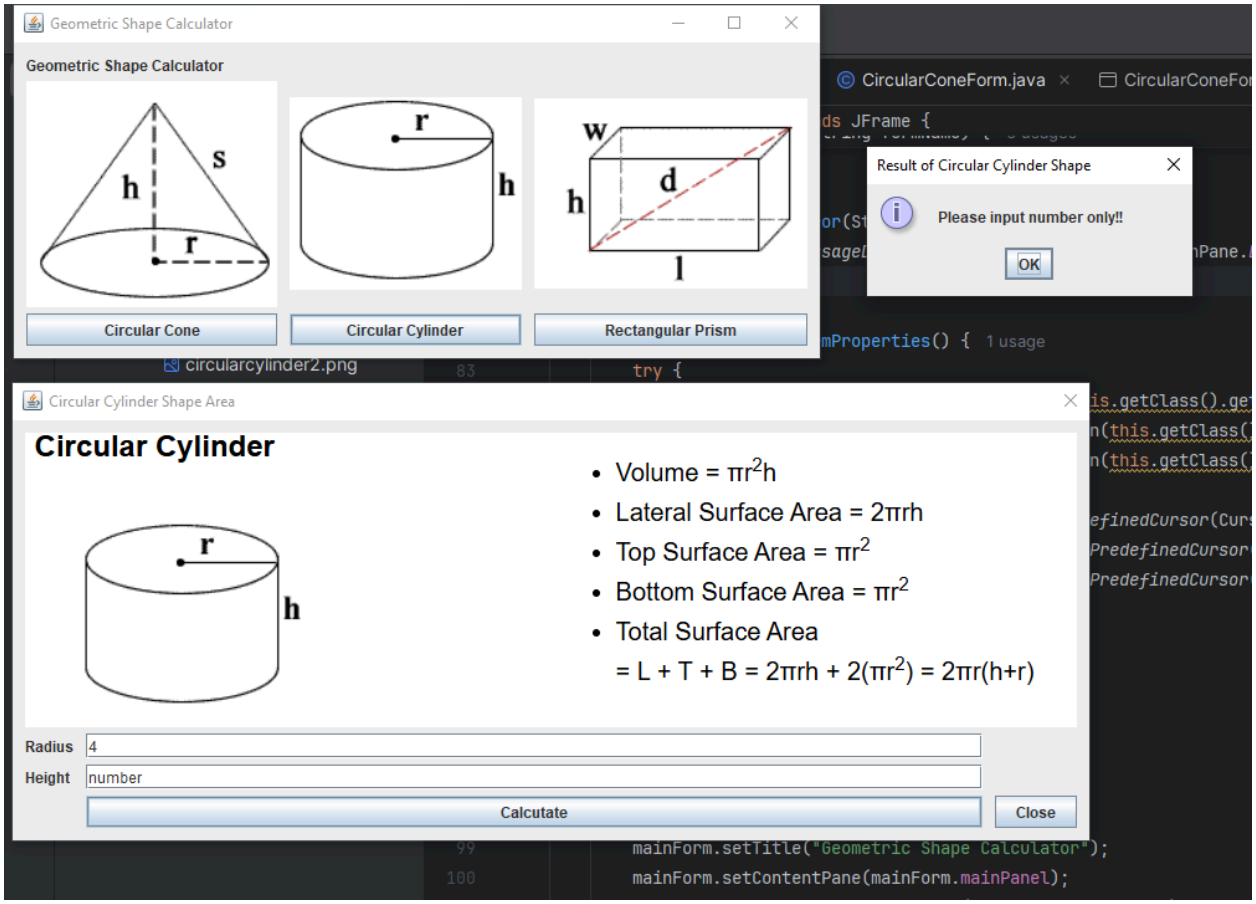
```
public class RectangularPrismForm {  4 usages
    public RectangularPrismForm() {  1 usage
        calculateButton.addActionListener(new ActionListener() {
            }
        });
    }

    public void show() {  1 usage
        frame.setVisible(true);
    }
    public void dispose() {  1 usage
        frame.setVisible(false);
        frame.dispose();
    }
    public void doCalculate() {  1 usage
        try {
            RectangularPrism rp = new RectangularPrism(Double.parseDouble(textLength.getText()), Double.parseDouble(textWidth.getText()),
                                    Double.parseDouble(textHeight.getText()));
            double volume = rp.getVolume();
            double diagonal = rp.getDiagonal();  // call calculate slant method for relative shape in JAR
            double totalSurfaceArea = rp.getTotalSurfaceArea();
            String result = "Volume = " + volume + "\n" + "Diagonal = " + diagonal + "\n" + "Total Surface Area = " + totalSurfaceArea;
            displayResult(result, "Result of Circular Cone Shape", JOptionPane.INFORMATION_MESSAGE);
        } catch (NumberFormatException err) {
            displayResult("Please input number only!!","Result of Circular Cone Shape",JOptionPane.INFORMATION_MESSAGE);
        }
    }
    public void displayResult(String resultMsg, String title, int type) {  2 usages
        JOptionPane.showMessageDialog(null, resultMsg, title, type);
    }
}
```

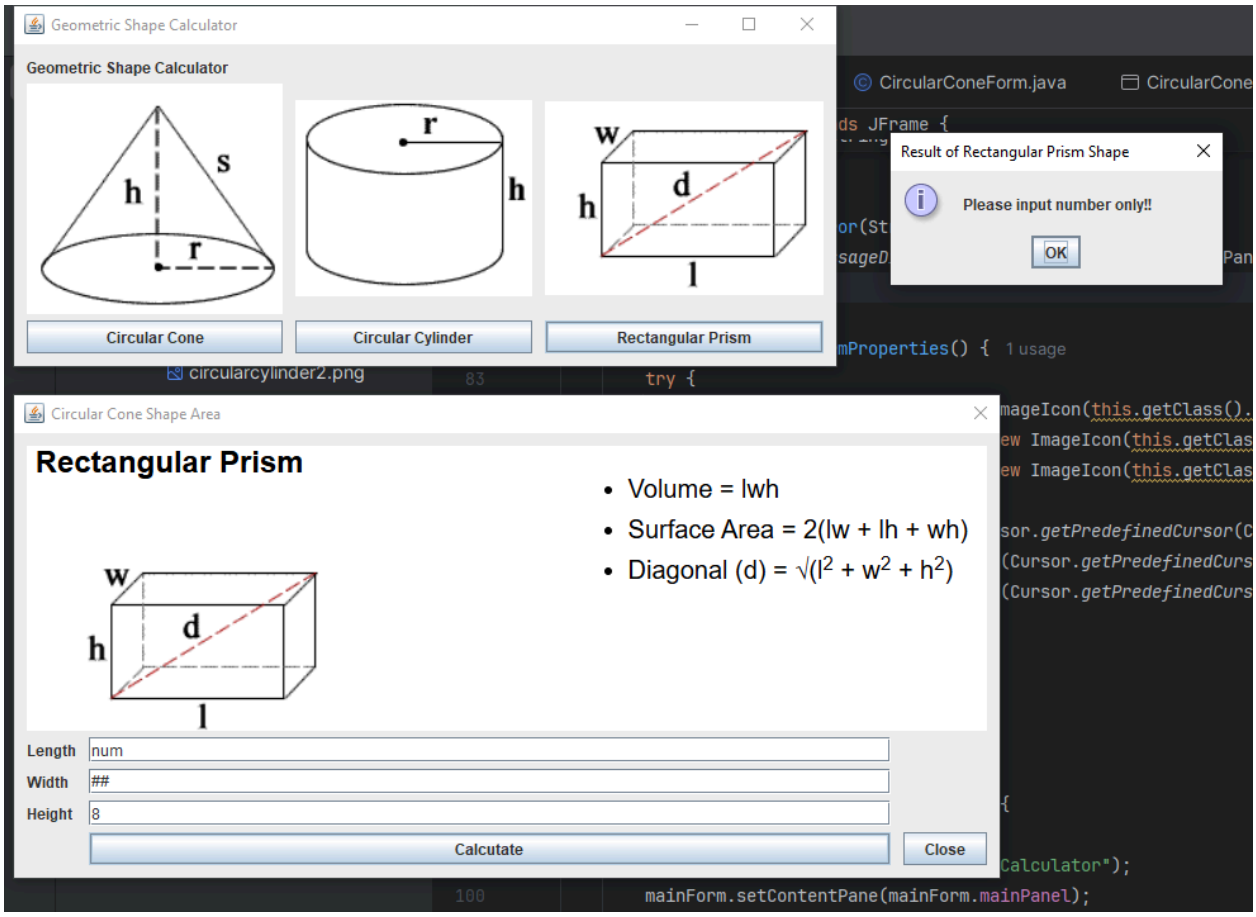
ผลการทำงาน










Geometric Shape Calculator
Geometric Shape Calculator
h
s
r
r
h
w
h
d
l
Circular Cone
Circular Cylinder
Rectangular Prism
CircularConeForm.java
CircularCone
Result of Rectangular Prism Shape
Please input number only!!
OK
circularcylinder2.png
Circular Cone Shape Area
Rectangular Prism
Volume = lwh
Surface Area = 2(lw + lh + wh)
Diagonal (d) = √(l² + w² + h²)
w
h
d
l
Length
num
Width
##
Height
8
Calcutate
Close
try {
mainForm.setContentPane(mainForm.mainPanel);